REMARKS

The Examiner's comments have been carefully reviewed.

The title has been amended so as to be better reflective of the invention to which the claims are directed.

Claim 4 has been deleted and three new hardware claims 21 to 23 have been added.

Claims 1-20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Nygard *et al.* (US 6,590,215). Independent claim 1 has been amended by incorporating therein the features of claims 3 which has therefore been canceled. Independent claim 5 has been amended by incorporating therein the features of claims 9 and 10, which have therefore been canceled. Likewise, claims 12 and 14-19 have been canceled since they define features that have been incorporated in claim 5, on which they depend.

It is noted that the Examiner acknowledges that Nygard *et al.* does not include an accumulator, but he avers that the use of an accumulator "would have been obvious to one of ordinary skill in the art to grant additional ability to the device to monitor the signals detected by the array of pixels (12)."

The rejection is respectfully traversed.

First, there is no motivation in Nygard *et al.* to monitor neighboring pixels since the approach adopted by Nygard *et al.* is predicated on the assumption that only those pixels whose energy exceeds a threshold level are active. Once a pixel is thus read out, there is no reason in Nygard *et al.* to monitor the energy of neighboring pixels. But, if they were monitored (which they are not), they would register as "active" only if their energy exceeded a discriminator threshold, which is downwards limited by electronic noise. In practice, as described in the application, in a particle detector using γ-rays whose energy is 511 keV, an incident photon's energy may be shared among a primary active pixel, which absorbs most of the energy, and neighboring pixels, which absorb only a small fraction of the energy. In such case, Nygard *et al.* cannot account for the energy associated with the neighboring pixels unless the threshold is so small, that there would be a risk of reading noise signals.

This means that in Nygard *et al.* there is no means of ensuring that all pixels in a 2D pixelated detector that are neighbors of a primary triggering pixel and that absorb a fraction of the energy signal will ever be read out.

Nygard *et al.* does not give any indication that the charges of the neighboring pixels are added to the charges of the hit pixel, nor that the readout method is continued until the cumulative charge has reached a threshold.

In contrast thereto, in the present invention as defined by claims 1 and 5, the readout operates according to 'master/slave' functionality. As long as one single trigger is provided by the ASIC, the system will be able to read out all neighbors on the 2D pixelated detector, even if the energy of the neighboring pixels is less than the discriminator threshold, until it is decided that enough of the photon energy is found.

The remaining claims are likewise believed to be allowable owing to their being dependent on allowable base claims.

It is respectfully submitted that the amendments to the title and claims overcome the Examiner's objections and put the application in a form that is suitable for allowance. Favorable reconsideration is accordingly requested.

Respectfully submitted,

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